UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/736,555	12/13/2000	Ronald L. Hollis	N-6732	5632

23456 7590 07/07/2004

WADDEY & PATTERSON
414 UNION STREET, SUITE 2020
BANK OF AMERICA PLAZA
NASHVILLE, TN 37219

EXAMINER	
WOO, RICHARD SUKYOON	

ART UNIT	PAPER NUMBER
3629	

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/736,555	HOLLIS	
	Examiner	Art Unit	
	Richard Woo	3629	MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-66 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-24,27,29-61,65 and 66 is/are rejected.

7)☒ Claim(s) 25,26,28 and 62-64 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1) The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

2) 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3) Claims 31-51 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In Claim 31, the computer program itself can not be directed to a practical application of the invention in the useful art to accomplish a concrete, useful, and tangible result. When the computer program is actually executed by the computer, the claimed subject matter produces a useful, concrete and tangible result.

Claim Objections

4) The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims

are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 54 (second occurrence) been renumbered 55.

Claim Rejections - 35 USC § 102

5) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6) Claims 1-2, 7-9, 12-13, 16-24, 29-31, 38-46, 52-53, 55-61 and 65-66 are rejected under 35 U.S.C. 102(a) as being anticipated by Tanaka et al. (US 6,343,285).

As for Claim 1, Tanaka et al. discloses a method comprising:

permitting a client to access a server (see Figs. 7-20, 23-26 and the descriptions thereof);

uploading from the client computer to the server a CAD file describing the customer manufactured part (see Id.);

analyzing the CAD file on the server to determine one or more manufacturing criteria for the part (see Figs. 2-24);

calculating a firm price quotation for the part based on the one or more criteria (see Fig. 26 and the description thereof); and

transmitting the price quotation to the client (see Supra Figs.).

As for Claim 2, Tanaka et al. further discloses the method wherein calculating step is performed substantially instantly with a preprogrammed pricing formula (see Fig. 26).

As for Claim 7, Tanaka et al. further discloses the method including: prior to the calculating step, permitting the client to select one of a plurality of available manufacturing process (see Figs. 2-24); and wherein the calculating step includes calculating the price quotation for the selected process (see Id.).

As for Claim 8, Tanaka et al. further discloses the method, wherein the manufacturing process is an additive process (see Supra Figs. for manufacturing process).

As for Claim 9, Tanaka et al. further discloses the method, wherein the additive process is a stereo lithography process (e.g., Fig. 11).

As for Claim 12, Tanaka et al. further discloses the method, wherein the process is a formative manufacturing process (see Figs. 2-24).

As for Claims 13 and 16, Tanaka et al. further discloses the method, wherein the one or more manufacturing criteria includes volume of the part (bigger the volume, more expensive inherently).

As for Claim 17, Tanaka et al. further discloses the method, wherein in the analyzing step, the one or more criteria includes the geometric extent of the part along multiple axes (see Figs. 2-26).

As for Claim 18, Tanaka et al. further discloses the method, wherein in the analyzing step, the criteria includes surface area of the part (see Id.).

As for Claim 19, Tanaka et al. further discloses the method, wherein in the analyzing step, the criteria includes the geometric extent of the part along multiple axes (see Supra Figs.).

As for Claim 20, Tanaka et al. further discloses the method, wherein in the analyzing step, the criteria includes surface area of the part.

As for Claim 21, Tanaka et al. further discloses the method, including: prior to calculating step, selecting one of a plurality of available materials; and wherein the calculating step includes calculating the price quotation for the selected material (see Fig. 10).

As for Claim 22, Tanaka et al. further discloses the method, including: prior to the calculating step, permitting the client to select one of a plurality of available surface finishes; in the analyzing step, the criteria includes surface area of the part; and in the calculating step, the price quotation is dependent on the selected surface finishes and the surface area (see Figs. 3-6 and the descriptions thereof).

As for Claim 23, Tanaka et al. further discloses the method including permitting the client to purchase the custom manufacture part online based upon the price quotation (see Supra Figs.).

As for Claim 24, Tanaka et al. further discloses the method, including: prior to the calculating step, permitting the client to select a quantity of the part grater than one; and the calculating step includes calculating the price quotation for the selected quantity, wherein the quantity price per unit is less than the price for a single unit (see Figs. 3-26).

As for Claim 29, Tanaka et al. further discloses the method, wherein the criteria includes identifications of 3-D geometric features relevant to a difficulty of the process (see Figs. 3-6, 22, 26).

As for Claim 30, Tanaka et al. further discloses the method, wherein the 3-D geometric features include at least one feature selected from (parting lines, undercuts, pockets, protrusions, wall thickness, surface features and solid features) (see Supra Figs.).

As for Claim 31, Tanaka et al. discloses a program comprising:

a CAD file analysis program for receiving a CAD file and analyzing the CAD file to determine one or more manufacturing criteria corresponding to each custom manufacturing part; and

a price generation program for generating a price quotation based upon the one or more manufacturing criteria (see Figs. 3-26 and the descriptions thereof).

As for Claim 38, Tanaka et al. further discloses the program including a feature selection program for allowing a user of the program to select one or more features for the parts being quoted (see Id.).

As for Claim 39, Tanaka et al. further discloses the program, wherein the features include material, process and surface finish (see Figs. 3-26).

As for Claim 40, Tanaka et al. further discloses the program, wherein the feature selection program allows a user to select one of a plurality of manufacturing process to be used to manufacture the parts (see Id.).

As for Claim 41, Tanaka et al. further discloses the program, wherein the processes include stereo lithography, selective laser sintering and fused deposition modeling (see Fig. 11).

As for Claim 42, Tanaka et al. further discloses the program, wherein the processes include at least one additive manufacturing process; and at least one formative manufacturing process (see Figs. 3-26 and the descriptions thereof).

As for Claim 43, Tanaka et al. further discloses the program, wherein the criteria include volume of each part, geometric extents of each part along multiple axes, and surface area of each part (see Id.).

As for Claim 44, Tanaka et al. further discloses the program, wherein the criteria includes identification of 3-D geometric features relevant to a difficulty of a process (see Supra Figs.).

As for Claim 45, Tanaka et al. further discloses the program, wherein the 3-D geometric features include at least one feature selected from the (parting lines, undercuts, pockets, protrusion, wall thickness, surface features and sold features.) (see Figs. 3-26)

As for Claim 46, Tanaka et al. further discloses the program including an order generation program for assembling all electronic files corresponding to a price quotation into a single directory for transmission to a supplier responsible for the quotation (see Figs. 3-6, 22, 26).

As for Claim 52, Tanaka et al. discloses a method comprising:

loading onto a computer a CAD file describing the customer manufactured part (see Figs. 3-26 and the descriptions thereof);

analyzing the CAD file on the system without human intervention to determine one or more manufacturing criteria for the part (see Id.);

calculating a firm price quotation for the part based on the one or more criteria; and

displaying the price quotation (see Figs. 3-6, 22, 26)

As for Claim 53, Tanaka et al. further discloses the method wherein calculating step is performed substantially instantly with a preprogrammed pricing formula (see Figs. 3-6, 22, 26).

As for Claim 55, Tanaka et al. further discloses the method including: prior to the calculating step, permitting a user to select one of a plurality of available manufacturing process; and wherein the calculating step includes calculating the price quotation for the selected process (see Figs. 3-26 and the descriptions thereof).

As for Claim 56, Tanaka et al. further discloses the method, wherein in analyzing step, the criteria includes volume of the part (see Supra; the bigger the volume, the more expansive).

As for Claim 57, Tanaka et al. further discloses the method, wherein in analyzing step, the criteria includes the geometric extent of the part along multiple axes (see Figs. 3-26).

As for Claim 58, Tanaka et al. further discloses the method, wherein in analyzing step, the criteria includes surface area of the part (see Supra Figs.).

As for Claim 59, Tanaka et al. further discloses the method including: prior to calculating step, selecting one of a plurality of available materials; and wherein the calculating step includes calculating the price quotation for the selected material (e.g., Fig. 10 and Supra Figs.).

As for Claim 60, Tanaka et al. further discloses the method including: prior to calculating step, permitting the client to select one or a plurality of available surface finishes; wherein in analyzing step, the criteria include surface area of the part; and wherein in calculating step, the price quotation is dependent upon the selected surface finish and the surface area (see Figs. 3-6, 22, 26).

As for Claim 61, Tanaka et al. further discloses the method including: prior to calculating step, permitting the client to select a quantity of the part grater than one, wherein the calculating step includes calculating the price quotation for the selected quantity, wherein the quantity price per unit is less than the price for a single unit (see Id.).

As for Claim 65, Tanaka et al. further discloses the method, wherein the criteria includes identification of 3-D geometric features relevant to a difficulty of the process (see Figs. 3-6, 22, 26).

As for Claim 66, Tanaka et al. further discloses the method, wherein the 3-D geometric features include at least one feature selected from (parting lines, undercuts, pockets, protrusions, wall thickness, surface features and solid features) (see Supra Figs.).

7) Claims 1, 14-15, 31 and 52 are rejected under 35 U.S.C. 102(a) as being anticipated by Suzuki et al.

As for Claim 1, Suzuki et al. discloses a method comprising:

permitting a client to access a server (see Figs. 1-6, 9-10, 16 and the descriptions thereof);

uploading from the client computer to the server a CAD file describing the customer manufactured part (see Id.);

analyzing the CAD file on the server to determine one or more manufacturing criteria for the part (see Supra Figs.);

calculating a firm price quotation for the part based on the one or more criteria (see Fig. 16 and the description thereof); and

transmitting the price quotation to the client (see Supra Figs.).

As for Claim 14, Suzuki et al. further discloses the method, wherein the manufacturing process includes the molding of parts from soft rubber tooling created using a pattern manufactured by an additive process; and the calculating step is performed with a preprogrammed pricing formula which includes a pattern part pricing formula, a tooling pricing formula, and a molded part pricing formula (see Figs. 8-9, 12-13, 16).

As for Claim 15, Suzuki et al. further discloses the method, wherein the process includes injection molding of the parts from thermoplastic material using molds; and the

calculating step is performed with a preprogrammed pricing formula which includes a tooling pricing formula and a molded part pricing formula (see Id.).

As for Claim 31, Suzuki et al. discloses a program comprising:

a CAD file analysis program for receiving a CAD file and analyzing the CAD file to determine one or more manufacturing criteria corresponding to each custom manufacturing part; and

a price generation program for generating a price quotation based upon the one or more manufacturing criteria (see Figs. 1-6 and the descriptions thereof).

As for Claim 52, Suzuki et al. discloses a method comprising:

loading onto a computer a CAD file describing the customer manufactured part (see Figs. 1-6, 9-16 and the descriptions thereof);

analyzing the CAD file on the system without human intervention to determine one or more manufacturing criteria for the part (see Id.);

calculating a firm price quotation for the part based on the one or more criteria; and

displaying the price quotation (see Fig. 16).

Claim Rejections - 35 USC § 103

8) Claims 3-6, 10-11, 27, 32-37, 47-50, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al..

As for Claims 3-6, 33-37 and 54, Tanaka et al. discloses the invention as recited earlier, but does not expressly disclose the method wherein the pricing formula is in the form: Price = a*V+b*H+c.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to formulate and utilize any formula to calculate the manufacturing cost because Applicant has not disclosed that the applicant's formula provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Tanaka et al. because Tanaka et al. can also output the costs calculated by the various estimating means.

Therefore, it would have been an obvious matter of design choice to modify Tanaka et al. to obtain the invention as specified in claims.

As for Claims 10-11, Tanaka et al. discloses the method as recited earlier, but does not expressly disclose the method including the additive process being a selective laser sintering process or a fused deposition modeling process.

It is common practice in the art of additive manufacturing process to incorporate the selective laser sintering process or fused deposition modeling process.

Therefore, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to utilize the well known manufacturing process for the purpose of manufacturing the custom manufactured part in conjunction with the CAD system.

As for Claims 27 and 32, Tanaka et al. discloses the invention as recited earlier, but does not expressly disclose that the CAD file is an STL file.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to utilize STL file as the CAD file because Applicant has not disclosed that the applicant's formula provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Tanaka et al. because Tanaka et al. can upload the CAD file and calculate the custom manufactured part base upon the CAD file.

Therefore, it would have been an obvious matter of design choice to modify Tanaka et al. to obtain the invention as specified in claims.

As for Claim 47, Tanaka et al. discloses the invention as recited earlier, but does not expressly disclose the program including a buildset grouping program for grouping a

plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to group a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine, because Applicant has not disclosed that the applicant's build grouping program portion provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Tanaka et al. because Tanaka et al. can calculate costs from the types and sizes of components.

Therefore, it would have been an obvious matter of design choice to modify Tanaka et al. to obtain the invention as specified in claim.

As for Claim 48, Tanaka et al. discloses the invention as recited earlier, but does not expressly disclose the price generation program calculating a price quotation for each subset, and sums the subset price quotations to generate a price quotation for the entire buildset.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to calculate a price quotation for each subset, and sums the subset price quotations to generate a price quotation for the entire buildset, because Applicant has not disclosed that the applicant's price generation program portion provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Tanaka et al. because Tanaka et al. can calculate costs from the types and sizes of components.

Therefore, it would have been an obvious matter of design choice to modify Tanaka et al. to obtain the invention as specified in claim.

As for Claim 49, Tanaka et al. discloses the invention as recited earlier, but does not expressly disclose the buildset grouping program determining a platform area required by each part, orders the parts from largest to least required platform area, and selects the largest parts sequentially to make-up the subsets.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to determine a platform area required by each part, orders the parts from largest to least required platform area, and select the largest parts sequentially to make-up the subsets because Applicant has not disclosed that the applicant's buildset grouping program portion provides an advantage,

is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Tanaka et al. because Tanaka et al. can calculate costs from the types and sizes of components.

Therefore, it would have been an obvious matter of design choice to modify Tanaka et al. to obtain the invention as specified in claim.

As for Claim 50, Tanaka et al. discloses the invention as recited earlier, but does not expressly disclose a buildset grouping program for grouping a plurality of parts making up the buildset into a plurality of subsets of parts, each subset being of a size that fit into an available volume of a selected machine.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to determine a platform area required by each part, orders the parts from largest to least required platform area, and select the largest parts sequentially to make-up the subsets because Applicant has not disclosed that the applicant's buildset grouping program portion provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Tanaka et al. because Tanaka et al. can calculate costs from the types and sizes of components.

Therefore, it would have been an obvious matter of design choice to modify Tanaka et al. to obtain the invention as specified in claim.

Allowable Subject Matter

9) Claims 25-26, 28 and 62-64 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,655,087 is cited to show a CAD system used in manufacturing metal parts in accordance with a CAD program, a cost calculation program is included in the program.

US 2002/0026392 is cited to show a method and apparatus for estimating product cost of a product by performing a cost comparison in view of a cost varying factor of the product.

US 2002/004761 is cited to show a system for production machines having their specification frequently changes, a user can easily and promptly identify their parts including portions of the specification which are unique to the individual production machines.

US 2002/0065790 is cited to show a cost estimation method and apparatus for estimating costs required when manufacturing a product.

WO 01/77781 is cited to show a method and system to obtain automatic quotations from manufacturing without the need for customer to disclose proprietary drawings and specifications to the supplier.

EP 1,168,225 is cited to show a method of an apparatus for estimating product cost, manufacturing cost being calculated for the respective makers based on the cost factor data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Woo whose telephone number is 703-308-7830. The examiner can normally be reached on Monday-Friday from 8:30 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on 703-308-2702. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

Richard Woo
GAU 3629
June 27, 2004

JOHN G. WEISS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600